FIG.1

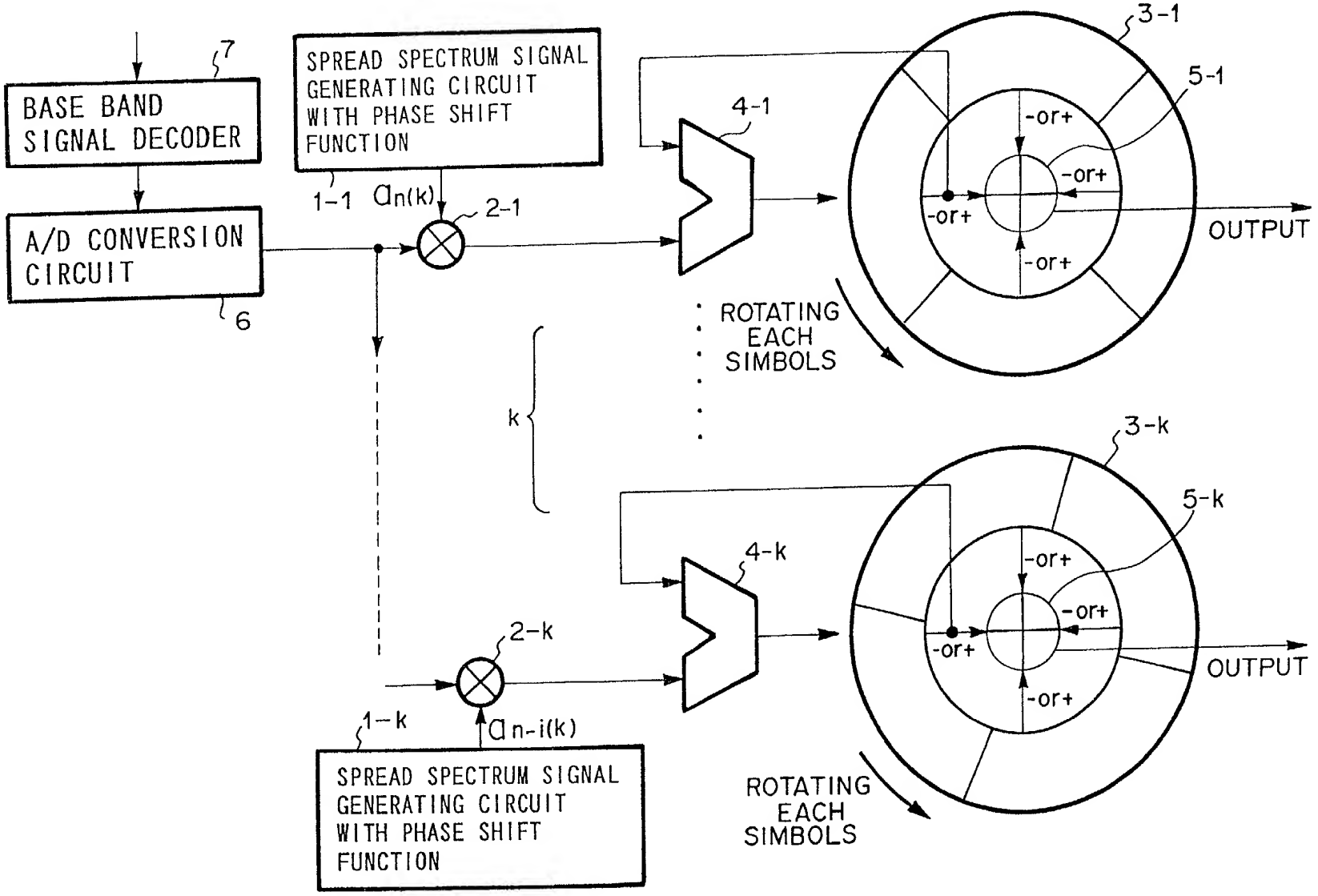

FIG.2

SYMBOL (ORTHOGONAL CODE)	POLARITY OF SYMBOL ADDITION(RING BUFFER)	CORRESPONDING DATA
1111	++++	11(HEADER)
1010	++++	10
1100	++−−	01
1001	+−−+	00

FIG. 3

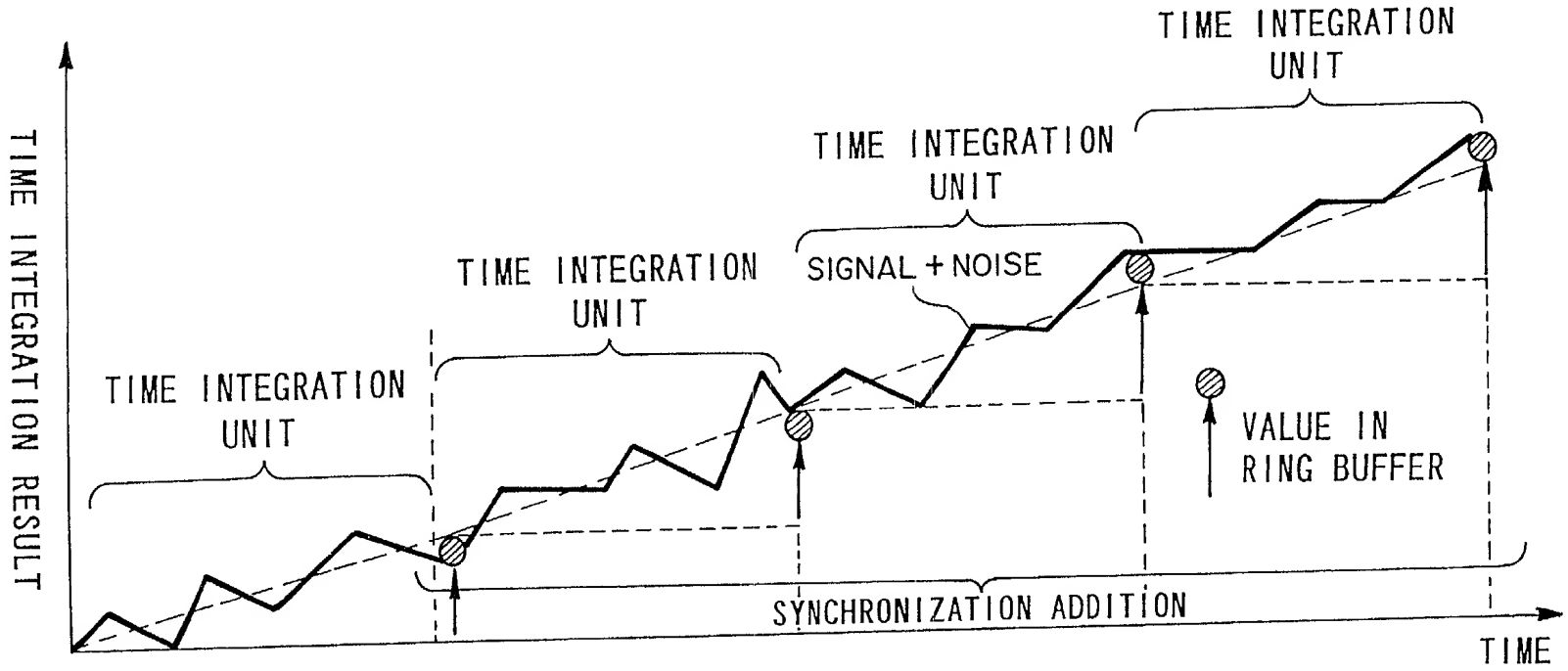

FIG.4

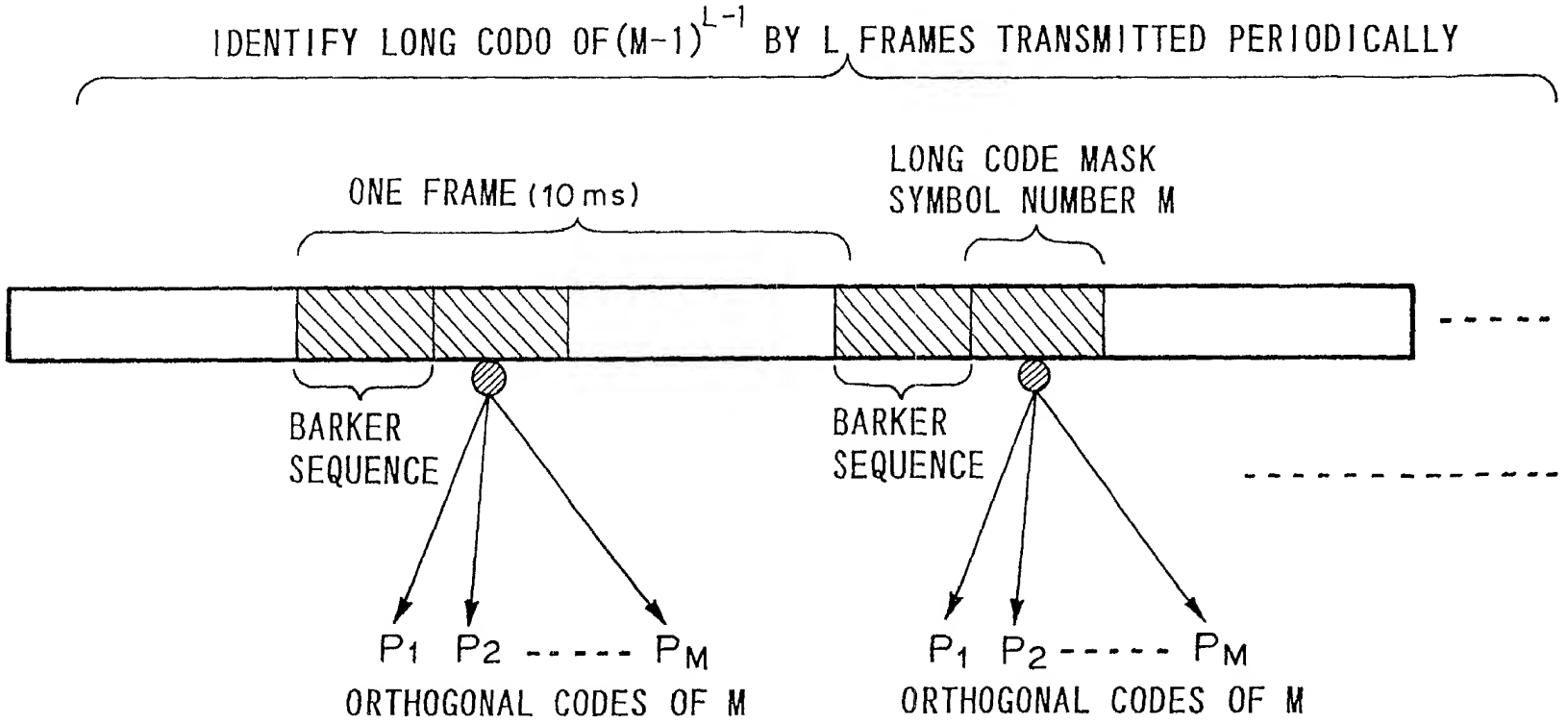

FIG. 5

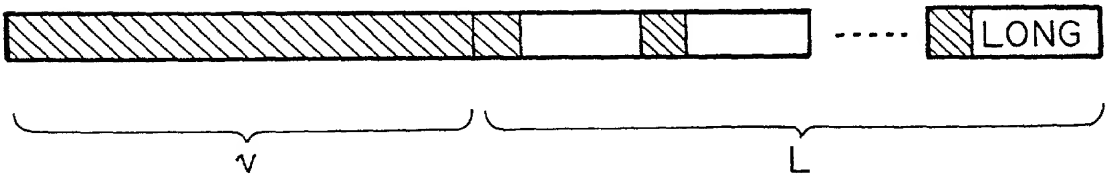

FIG.6

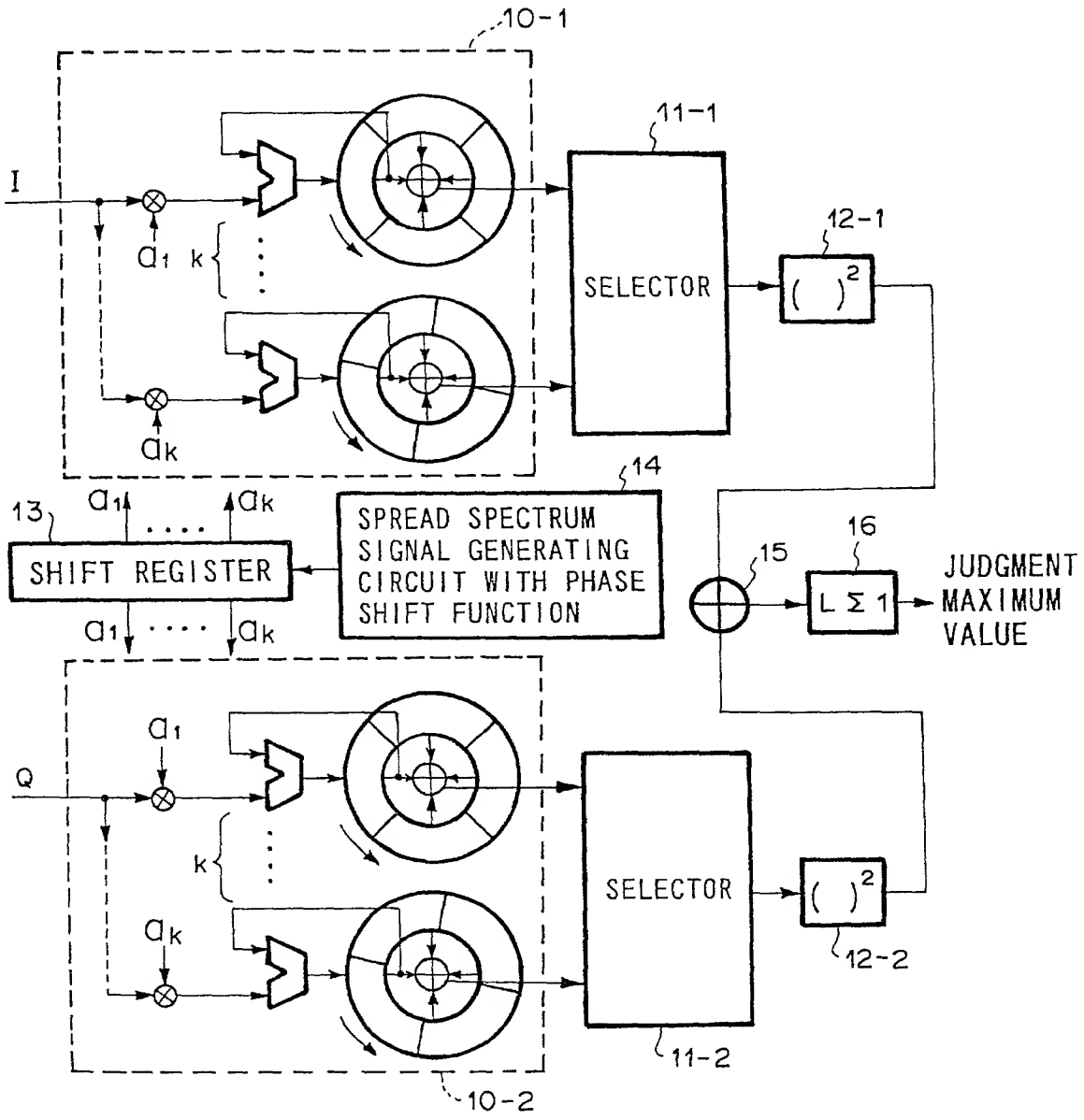
10-1
11-1
I
a_1 k
a_k
SELECTOR
12-1
$( )^2$
14
13
a_1 .... a_k
SHIFT REGISTER
SPREAD SPECTRUM SIGNAL GENERATING CIRCUIT WITH PHASE SHIFT FUNCTION
15
16
L Σ 1
JUDGMENT MAXIMUM VALUE
a_1 .... a_k
Q
a_1
k
a_k
SELECTOR
$( )^2$
12-2
11-2
10-2

FIG.7

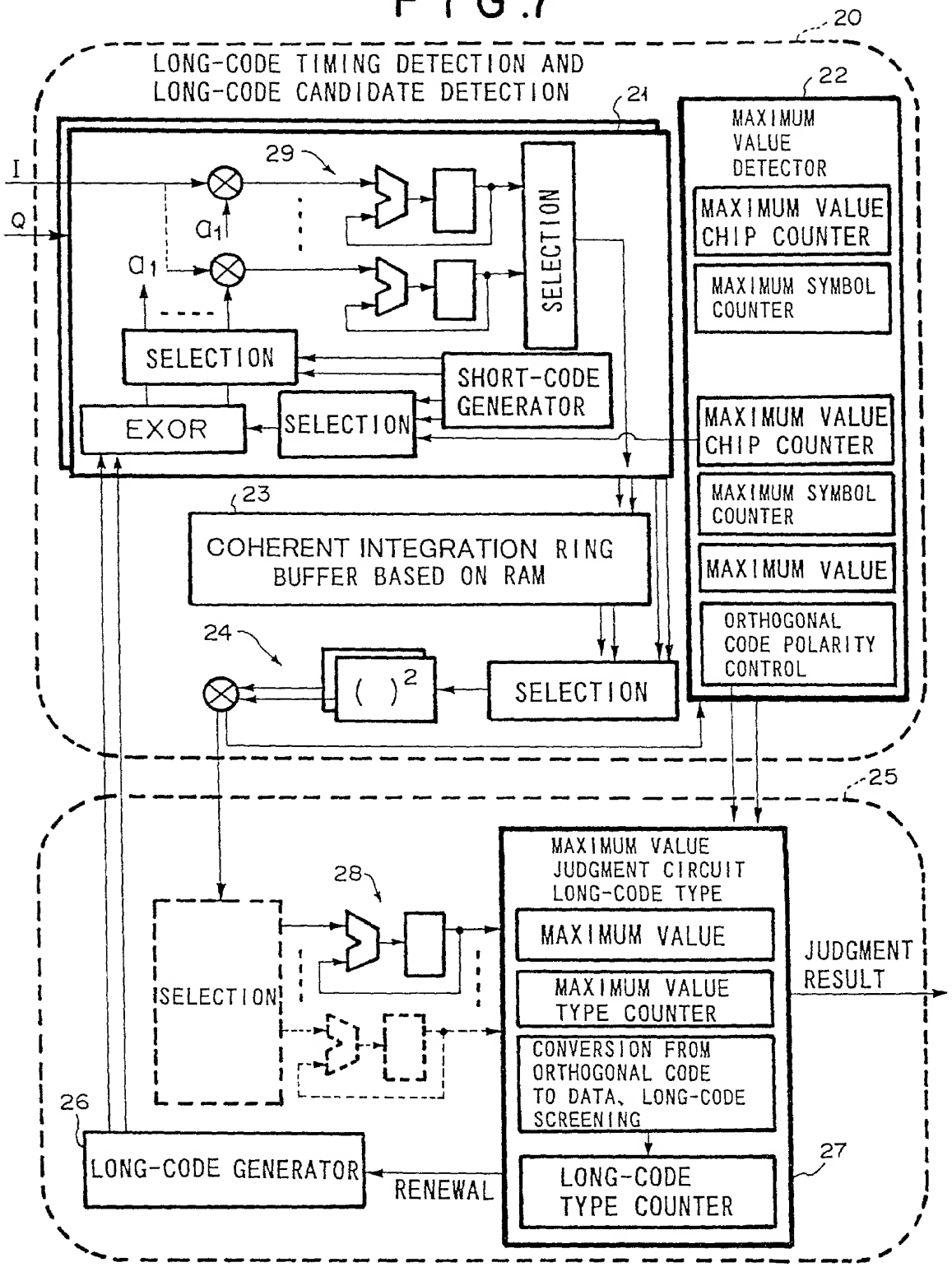
20
LONG-CODE TIMING DETECTION AND
LONG-CODE CANDIDATE DETECTION
21
22
MAXIMUM
VALUE
DETECTOR
MAXIMUM VALUE
CHIP COUNTER
MAXIMUM SYMBOL
COUNTER
I
Q
29
SELECTION
SELECTION
SHORT-CODE
GENERATOR
EXOR
SELECTION
MAXIMUM VALUE
CHIP COUNTER
MAXIMUM SYMBOL
COUNTER
MAXIMUM VALUE
ORTHOGONAL
CODE POLARITY
CONTROL
23
COHERENT INTEGRATION RING
BUFFER BASED ON RAM
24
( )2
SELECTION
25
MAXIMUM VALUE
JUDGMENT CIRCUIT
LONG-CODE TYPE
28
SELECTION
MAXIMUM VALUE
MAXIMUM VALUE
TYPE COUNTER
CONVERSION FROM
ORTHOGONAL CODE
TO DATA, LONG-CODE
SCREENING
JUDGMENT
RESULT
26
LONG-CODE GENERATOR
RENEWAL
LONG-CODE
TYPE COUNTER
27

FIG.8

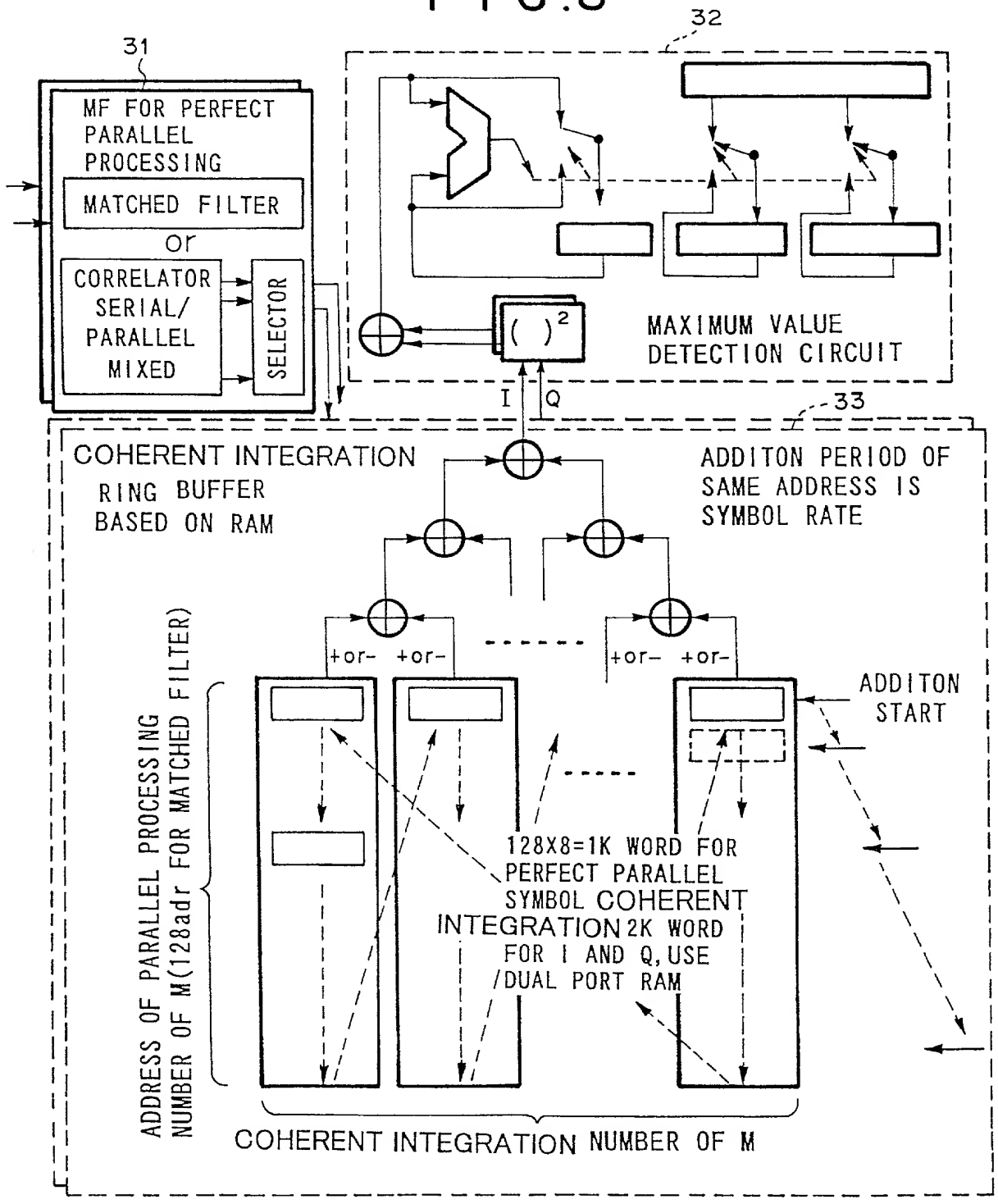
31
32
MF FOR PERFECT PARALLEL PROCESSING
MATCHED FILTER
Or
CORRELATOR SERIAL/ PARALLEL MIXED
SELECTOR
( )²
MAXIMUM VALUE DETECTION CIRCUIT
I
Q
33
COHERENT INTEGRATION RING BUFFER BASED ON RAM
ADDITON PERIOD OF SAME ADDRESS IS SYMBOL RATE
+or- +or-
+or- +or-
ADDITON START
ADDRESS OF PARALLEL PROCESSING NUMBER OF M(128adr FOR MATCHED FILTER)
128X8=1K WORD FOR PERFECT PARALLEL SYMBOL COHERENT INTEGRATION 2K WORD FOR I AND Q, USE /DUAL PORT RAM
COHERENT INTEGRATION NUMBER OF M

FIG.9

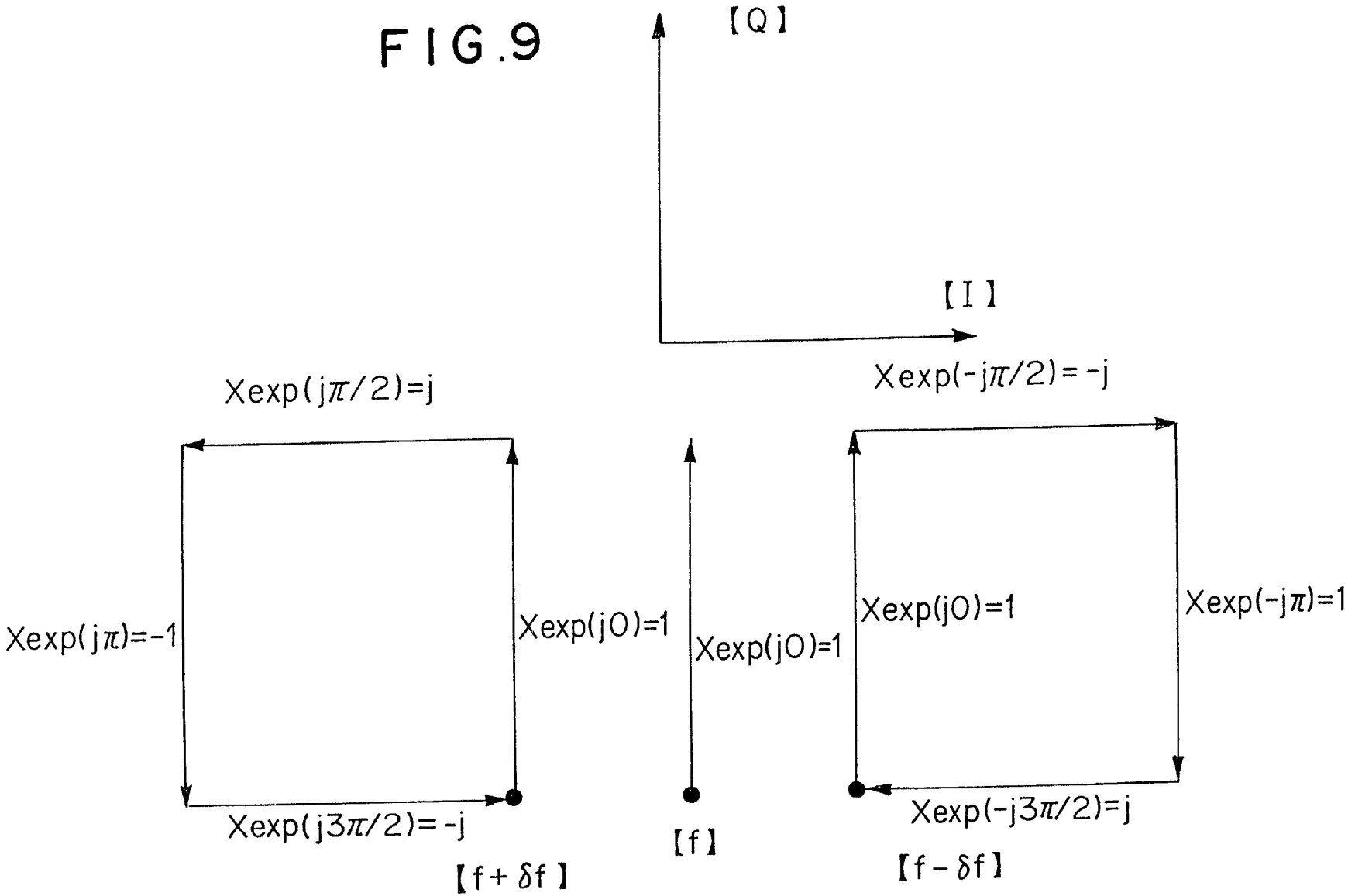

FIG.10

TIME(PHASE) \ FREQUENCY DEVIATION		$f+\delta f$		f		$f-\delta f$	
		I	Q	I	Q	I	Q
t_0	0	a	b	a	b	a	b
t_1	$\pi/2$	$-b$	a	a	b	b	$-a$
t_2	π	$-a$	$-b$	a	b	$-a$	$-b$
t_3	$3\pi/2$	b	$-a$	a	b	$-b$	a

● CARRIER FREQUENCY DEVIATION COHERENT INTEGRATION

【$f+\delta f$】 I : $I(t=t_0)-Q(t=t_1)-I(t=t_2)+Q(t=t_3)$

Q : $Q(t=t_0)+I(t=t_1)-Q(t=t_2)-I(t=t_3)$

【f】 I : $I(t=t_0)+I(t=t_1)+I(t=t_2)+I(t=t_3)$

Q : $Q(t=t_0)+Q(t=t_1)+Q(t=t_2)+Q(t=t_3)$

【$f+\delta f$】 I : $I(t=t_0)+Q(t=t_1)-I(t=t_2)-Q(t=t_3)$

Q : $Q(t=t_0)-I(t=t_1)-Q(t=t_2)+I(t=t_3)$